MUKIMOV, S. M., KAPKAYEVA, R. I., BERGMAN, A. G.

Systems (Chemistry)

Diagrams of solubility, viscosity, and specific gravity of the system: potassium iodide-potassium bromide in water solutions at 0°, 15°, 35°, and 50°. Trudy Inst. khim. AN Uz.SSR No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress June 1953. UNCL.

EWT(d)/EWP(1) Po-4/Pq-4/Pg-4/Pas-2/Pk-4/Pl-4 IJP(c) BC
S/0021/65/000/002/0151/0153

ACCESSION NR: AP5006453

AUTHOR: Kapkhenhst, Kh. (Kapkhengst, Kh.)

TITLE: On the derivability of event implications

SOURCE: AN UkrRSR. Dopovidi, no. 2, 1965, 151-153

TOPIC TAGS: automaton, axiom set, event implication

ABSTRACT: The article considers one form of specifying the operating conditions [illegible], namely a system of event implications. Systems of event implications [illegible] the following derivation [illegible]

$$\vdash \emptyset \to Y$$

$$\vdash X \to \overline{\emptyset} \quad (\emptyset \to \text{empty word}) \qquad (2)$$

Card 1/2

L 45520-65
ACCESSION NR: AP5006453

$$X \to Y,\ U \to V \vdash X \cup U \to Y \cup V \tag{3}$$

$$X \to Y,\ U \to V \vdash X \cap U \to Y \cap V \tag{4}$$

$$\vdash e \to e \tag{5}$$

(e - event consists of one empty word),

$$X \to Y \vdash \bigcup_{x \in X} Xx \to \bigcup_{y \in Y} Yy \tag{6}$$

$$Xx \to \bigcup_{y \in Y} Yy \vdash X \to Y \tag{7}$$

$$e \to \emptyset \vdash \overline{\emptyset} \to \emptyset. \tag{8}$$

This report was presented by V. M. Hlushkov (V. M. Glushkov). Orig. art. has: 8 formulas.

ASSOCIATION: Kyyivs'kyy derzhavnyy universytet (Kiev State University)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: MA, DP

NR REF SOV: 002 OTHER: 000

Card 2/2

KAPKHENGST, Kh.

Implications of events and controlling automata. Dop. AN URSR no.5: 567-569 '65. (MIRA 18:5)

1. Kiyevskiy gosudarstvennyy universitet.

L 09072-67 EWT(d) IJP(c) GD
ACC NR: AT6010520 SOURCE CODE: UR/0000/65/000/000/0006/0030

AUTHOR: Kapkhengst, Khaynts

ORG: none

TITLE: Axiomatized classes of automatons

SOURCE: AN UkrSSR. Voprosy teoreticheskoy kibernetiki (Problems in theoretical cybernetics). Kiev, Naukova dumka, 1965, 6-30

TOPIC TAGS: discrete automaton, automaton theory, Boolean algebra, mathematic logic

ABSTRACT: The paper deals with a study of the problems of synthesizing discrete automatons from a point of view in which the prescribed conditions are regarded as a certain type of axiom system defining a particular class of automatons. This formulation of the problem is practical, since the requirements set by the customer generally have to do not with an individual automaton, but with a whole class of automatons. The concept of causality as defined by L. A. Kaluzhnin (DAN URSR, 1965, 1.) is discussed. In the present paper, this concept is replaced by the broader concept of occurrence or event implication, $P \Rightarrow Q$, where P is the event in the input alphabet, and Q is the event in the output alphabet. A system of rules is given, by which from a certain set of implications all the corollaries can be derived in a substantive form. The

Card 1/2

ACC NR: AT6010529

author proposes a restatement of the algebraic fundamentals underlying the abstract theory of automatons, in which the concept of the Mealey automaton is replaced by the purely algebraic concept of the "bidold" and it is demonstrated that the familiar proof theorems of automaton theory are nothing more than concrete applications of the older, fundamental theorems of general algebra. Apart from the case of a finite number of internal states, the bidold concept does not yet entirely encompass the intuitive concept of the automaton. The paper provides an algebraic description of automatons of classes $\mathfrak{A}$ axiomatized by a set $\mathfrak{C}$ of event implications, using "control automatons." The author expresses his deep gratitude to his supervisor, Prof. Lev Arkad'yevich Kaluzhnin for suggesting this very interesting topic, and also for his support.

SUB CODE: 09,12/ SUBM DATE: 27Aug65/ ORIG REF: 007/ OTH REF: 002

Card 2/2 mat

KAPKIN, M. M. Cand Tech Sci -- (diss) "Selection of cements and compositions of concretes, and the perfection of a technology for reinforced-concrete coating slabs of ~~plate casing for~~ maritime hydraulic engineering structures." Mos, 1957. 11 pp (Min of Higher Education USSR. Mos Order of Labor Red Banner Construction Engineering Inst im V. V. Kuybyshev), 110 copies (KL, 11-58, 117)

Kapkin M. M.

97-57-9-10/17

AUTHORS: Leybovich, Kh. M. (Candidate of Technical Sciences and Kapkin, M. M. (Engineer).

TITLE: Effect of Organosilicon Additives on the Durability of Concrete (Vliyaniye kremniyorganicheskikh dobavok na stoykost' betona).

PERIODICAL: Beton i Zhelezobeton, 1957, Nr.9. pp.369-371 (USSR).

ABSTRACT: The durability of concrete depends on the action of aggressive materials and the effect of frost. The effect of aggressive materials in adverse conditions does not depend only upon the chemical and mineralogical composition of Portland cement, but also on the physical properties of concrete, which tend to increase corrosion. During recent years surface-active additives have been widely used for concrete, with the effect of changing the structure of the concrete and increasing its density. NIITsement carried out investigations aimed at increasing the durability of concrete made from cements containing C_3A in excess of 5% (that is, cement which does not comply with the temporary technical requirements of MPSM, USSR (1949), allowing for the fact that the concrete would be subjected to frost and other aggressive media. Experiments were carried out on the

Card 1/4

97-57-9-10/17

Effect of Organosilicon Additives on the Durability of Concrete.

effect of organo-silicon additives in cement; a sodium salt of methyl silicon and ethylpolysiloxanes were used. Methyl silicon compound is a white powder soluble in caustic soda. This was introduced into a concrete mixture in a 16% solution. Ethylpolysiloxane (KZh) is an oily liquid which is insoluble in water. This was used in a 50% aqueous emulsion. The cements used in these investigations were prepared in the laboratory of the Nikolayev plant. The mineralogical composition of the clinker was: C_3S - 60%, C_2S - 17%, C_3A - 13%, C_4AF - 9%; the degree of grinding of cement was defined by the residue on sieve No.0085, and equalled 8%. The effect of organo-silicon compounds on the strength of cement was defined according to the method of GOST 310-41. Results are tabulated in Table 1. Data obtained show that organo-silicon compounds used in quantities of 0.05 and 0.1% increase slightly the hardness of the cement with regard to compression as well as to tension. The additive of 0.2% decreases the strength in compression and increases the strength in tension. The influence of organo-silicon additives

Card 2/4 was investigated in concrete which contained equal or

Effect of **Organosilicon** Additives on the Durability of Concrete.

smaller quantities of water in comparison with controlled concretes (without additives). The tests on strengths and frost-resistance were carried out on test cubes 10 x 10 x 10 cm. The concrete mix used was 1 : 1.75 : 3.5, and the water/cement ratio was 0.45 and 0.35-0.38. A vibrator was used in the casting and consolidation of the cement. The aggregates consisted of granite ballast graded down from 20 mm, and "Moskvoretsk" sand. Table 1 gives the strength of the cement in grout of stiff consistency, of 1 : 3. Table 2 gives the properties of concrete mix with water/cement ratio of 0.45. Ethylpolysiloxane compounds very easily plasticize concrete mixes with water/cement ratio equalling 0.45, as shown in Table 2 and in Fig.1. The plasticizing action of organo-silicon materials in concrete mixes with water/cement ratio of 0.45 was evaluated by its workability - defined by the method of Prof. B. G. Skramtayev. Fig.2 gives a graph of the strengths of the concrete test cubes made with water/cement ratio of 0.45, in relation to the form and quantity of organo-silicon additives. Table 3 gives properties of concrete mixes of a similar workability prepared with a small

97-57-9-10/17

Effect of Organosilicon Additives on the Durability of Concrete.

quantity of water and deposited by vibration without load. Fig.3. gives graphs of the strengths and frost resistance of concrete test cubes made with water/cement ratio of 0.35 - 0.38, in relation to the type of organosilicon additive. Fig.4 shows a graph of the frost resistance of concrete test cubes with water/cement ratio of 0.45, in relation to quantity of additives used. The cubes were defrosted in an aggressive medium (sea water) of the following composition (in gms per litre): MaCl - 27.213; $MgCl_2$ - 3.807; $MgSO_4$ - 1.658; $CaSO_4$ - 1.260 K_2SO_4 - 0.863; $CaCO_3$ - 0.123; $MgBr_2$ - 0.076; KCl - 0.510 The total quantity of salts was 35.510 gm per 1 litre. As a result of the above investigations it was possible to obtain frost resisting concrete, based on cement with high content of tricalcium aluminate, by adding 0.1 - 0.15% of ethylpolysiloxane compounds.

AVAILABLE: Library of Congress.

1. Concrete-Durability 2. Concrete-Weather effects 3. Concrete-Additives-Effectiveness

Card 4/4

AUTHORS: Malinin, Yu.S., and Kapkin, M.M.

TITLE: The Measurement of the Hardening Process of Cement During Steaming by the Method of Contraction (Izmereniye metodom kontraktsii protsessa tverdeniya tsementa pri proparivanii)

PERIODICAL: Tsement, 1958, Nr 6, pp 23-26 (USSR)

ABSTRACT: Volume changes in hardening cement are measured by hydrostatic suspension of a specimen in an inert liquid. The chemical and mineralogical composition of the clinkers tested is shown in table 1. The contraction curves (Figure 1) demonstrate that contraction increases if the duration of the temperature increase lengthens from 2 to 8 hours; that it also increases in isothermal heating during the first 2 hours; that a further isothermal heating to 14 hours does not increase contraction; that a reduction of temperature is

The Measurement of the Hardening Process of Cement During Steaming by the Method of Contraction

accompanied by an increase in contraction. Principally, the hydration reactions during steaming of cement take place during the period of temperature increase. In the isothermal process, the hydration products of clinker start passing into the crystalline state. The degree of crystallization is directly dependent on the duration of the isothermal heating. There are 3 sets of graphs, 1 table and 4 Soviet references.

Card 2/2

ROYAK, S.M., dotsent kand.tekhn.nauk; VLASOVA, M.T., inzh.; KAPKIN, M.M., kand.tekhn.nauk; KRYKHTIN, G.S., kand.tekhn.nauk

Using multistage method in grinding mixed cements. Trudy NIITSement no.12:51-83 '59. (MIRA 13:5)
(Cement) (Milling machinery)

MOSHCHANSKIY, N.A., doktor tekhn. nauk. Prinimali uchastiye: MOSKVIN, V.M., doktor tekhn. nauk, prof.; ALEKSEYEV, S.N., kand. tekhn. nauk; KAPKIN, M.M.; MEDVEDEV, V.M.; PODVAL'NYY, A.M., inzh.; STRASHNYKH, V.P., red.izd-va; MOCHALINA, Z.S., tekhn. red.

[Regulations on the use and protection of reinforced concrete in shops with corrosive media]Instruktsiia po primeneniiu i zashchite zhelezobetona v tsekhakh s agressivnymi sredami. Moskva, Gosstroiizdat, 1961. 29 p. (MIRA 15:8)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Moshchanskiy).
(Corrosion and anticorrosives)
(Reinforced concrete)

SKRAMTAYEV, B.G., prof.; KAPKIN, M.N., kand.tekhn.nauk; YEREMEYEV, G.G., inzh.

Effect of temperature stresses on the frost resistance of concrete. Bet. i zhel.-bet. no.10:468-470 O '61.
(MIRA 14:12)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Skramtayev).
(Frost resistant concrete)

S/081/62/000/003/052/090
B149/B102

AUTHORS: Gorchakov, G. I., Kapkin, M. M., Ptitsyn, O. A.

TITLE: Cement and concrete types recommended for severe conditions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 391, abstract 3K350 (Tr. N.-i. in-ta betona i zhelezobetona Akad. str-va i arkhitekt. SSSR, no. 22, 1961, 64 - 92)

TEXT: The results of lengthy investigations of the durability of concrete depending on its mineralogical and qualitative composition, the addition of organic surface-active substances, its water/cement ratio, the period of preliminary hardening under normal conditions and on steaming, -are given. During a cold period, samples situated in a sea water zone of changing level were subjected to two cycles of freezing-thawing every 24 hours. The result of the long term investigation showed that the main cause of quick deterioration of concrete under severe conditions was: its inadequate compactness, non-uniformity of its structure (faulty seams and cracks formed at the time of laying and hardening due to neglect of correct production methods. Advice is given concerning the

Card 1/2

Cement and concrete types...

choice of materials and methods of construction. The wide use of prefabricated constructions with water/cement ratio 0.3 - 0.4 is recommended for the external parts of hydrotechnical structures subjected to repeated freezing. [Abstracter's note: Complete translation.]

Card 2/2

MEDVEDEV, V.M.; KAPKIN, M.M.

Exhibition on anticorrosion protection of metals and building materials. Prom. stroi. 39 no. 1:62-63 '61. (MIRA 14:1)
(Corrosion and anticorrosives)

MOSKVIN, V.M., doktor tekhn. nauk, prof.; MEDVEDEV, V.M., kand. tekhn. nauk; KAPKIN, M.M., kand. tekhn. nauk. Prinimali uchastiye: IVANOV, F.M., kand. tekhn. nauk; TSVETKOV, S.N., kand. tekhn. nauk; PAVLOV, V.N., inzh.; KLIMOVA, G.D., red. izd-va; BOROVNEV, N.K., tekhn. red.

[Instructions for increasing the durability of concrete in elements of marine hydraulic structures] Instruktsiia po povysheniiu dolgovechnosti betona v konstruktsiiakh morskikh gidrotekhnicheskikh sooruzhenii. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1962. 58 p. (MIRA 15:5)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Moskvin). 3. TSentral'naya laboratoriya korrozii Nauchno-issledovatel'skogo instituta betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Medvedev, Kapkin). 4. TSentral'nyy nauchno-issledovatel'skiy institut svyazi Ministerstva transportnogo stroitel'stva SSSR (for Ivanov).
(Hydraulic structures) (Concrete construction)

MOSHCHANSKIY, N.A., doktor tekhn.nauk, prof.; MEDVEDEV, V.M., kand.tekhn. nauk; KAPKIN, M.M., kand.tekhn.nauk; SUDAKOV, V.B., inzh.; KONOHENKO, A.S., inzh.

Increasing the stability of reinforced concrete cooling towers. Prom.stroi. 40 no.11:36-39 '62. (MIRA 15:12)
(Cooling towers) (Concrete—Corrosion)

L 22902-65 EWG(s)-2/EWT(m) Pw-4
ACCESSION NR: AP5001731 S/0097/64/000/011/0518/0520

AUTHORS: Kapkin, M. M. (Candidate of technical sciences); Mazur, B. M. (Engineer)

TITLE: Frost stability of concretes at low negative temperatures

SOURCE: Beton i zhelezobeton, no. 11, 1964, 518-520

TOPIC TAGS: cement, construction material, low temperature construction

ABSTRACT: The influence of chemical-mineral and substance content of cements on the frost stability of concrete at low subzero temperatures was studied. Specimens prepared by dimensions [illegible] are given in Table 1 on the Enclosures). Crushed granite and quartz sands were used as aggregates. Specimens were placed in a chamber for 3 hours at -50C with vigorous air ventilation. [illegible] after which the specimens were placed [illegible] Testing of the concretes was [illegible] by 5-10C increments and holding at the [illegible] specimens were measured at [illegible] on the Enclosures. Figures 1 and [illegible] respectively. [illegible] informations for the first freezing [illegible]

Card 1/2

L 22902-65
ACCESSION NR: AP5001781

drop and the deformations relative to degree of temperature drop at the twentieth freezing cycle. The authors concluded that higher alite content in portland [illegible] improves frost stability of [illegible] freezing of concretes [illegible]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 04 SUB CODE: MT

NO REF SOV: 005 OTHER: 000

Card 2/6

GORCHAKOV, Grigoriy Ivanovich; KAPKIN, Mikhail Matveyevich; SKRAMTAYEV, Boris Grigor'yevich; IVANOV, F.M., kand. tekhn. nauk, retsenzent;

[Improving the frost resistance of concrete in elements employed in industrial and hydraulic structures] Povyshenie morozostoikosti betona v konstruktsiiakh promyshlennykh i gidrotekhnicheskikh sooruzhenii. Moskva, Stroiizdat, 1965. 193 p. (MIRA 18:12)

VAYNSHTEYN, B.P.; KAGAN, L.Kh.; RAPOPORT, I.B.; KRUGLIKOV, V.Ya.; KAPKIN, V.D.

Hydrogenation of some oxygen-containing compounds over precipitated iron-copper catalysts. Neftekhimia 2 no.1:100-105 Ja-F '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.
(Hydrogenation) (Catalysts)

KAPKIN, V.D.; RATOMSKAYA, M.A.; BELYANIN, V.B.; BASHKIROV, A.N.

Spectrophotometic determination of primary, secondary, and tertiary higher aliphatic alcohols when present together. Zhur. anal. khim. 20 no.3:364-371 '65. (MIRA 18:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova i Institut neftekhimicheskogo sinteza imeni Topchiyeva AN SSSR, Moskva.

KAPKO, J.

Elastic protective coverings. p. 168. (Mechanik, Vol. 30, No. 4, Apr 1957, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

Kapko, Jerzy

POLAND

3,4-Dinitrocatechol. Jerzy Kapko (Univ. Kraków, Poland). *Roczniki Chem.* 24, 105-7(1950-1)(English summary).—*3,4-Dinitrocatechol* (I) (2 g.) was obtained by cooling 4 g. *o*-$(HO)_2C_6H_4$, 20 g. $NaNO_2$, and 150 ml. H_2O, adding 20% H_2SO_4, extg. the mixt. with Et_2O, drying the ext., distg. off the Et_2O, and crystg. from C_6H_6 and then from H_2O; dihydrate, m. 82°, after drying at 110°, m. 140-7° (decompn.). Dibenzoate crystd. from 2:1 ligroine-C_6H_6, m. 111.5°. *4-Nitrocatechol* (0.5 g.) remains in mother liquor. I (2 g.) in 50 ml. boiling MeOH with an equiv. amt. Me_2SO_4 and 10 ml. 40% NaOH yields *3,4-Dinitroguaiacol*, recrystd. from MeOH it m. 203-6°. R. Dowbenko

KAPKO, Jerzy; MAJSAK, Zbigniew

Analytic conditions for a rapid method of determining silicon in steel and cast iron according to Kordon and Sajo. Chem anal 5 no.3:505-508 '60. (EEAI 10:8)

1. Laboratorium Fizyko-Chemiczne Instytutu Obrobki Skrawaniem, Krakow.
(Silicon) (Steel) (Cast iron)

34056
S/123/62/000/003/011/018
A004/A101

11.1110

AUTHORS: Kapko, J., Majsak, Z.

TITLE: Improving the service qualities of electrolytes used in the electro-spark machining of metals

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 3, 1962, 39, abstract 3B199 (Próby zastąpienia szkła wodnego w obróbce termoelektrolitycznej elektrolitami o lepszych własnościakh eksploatacyjnych. "Mechanik", 1960, v. 33, no. 10, 529, Polish)

TEXT: The authors report on the results of work aiming at inhibiting the aging and drying up of water glass solutions by adding to it various additives. It was found that this problem can be successfully solved by adding 0.001 weight per cent of cetyl alcohol to the water glass solution. The addition of this additive increases the service life of water glass by a factor of 2, reduces the electrolyte evaporation by 20% and prevents the liberation of any harmful by-products.

E. Strygin

[Abstracter's note: Complete translation]

Card 1/1

S/081/62/000/008/026/057
B160/B101

AUTHOR: Kapko, Jerzy

TITLE: Production and conditions of use of volatile corrosion retarders for protecting tools and machine components from corrosion

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1962, 325, abstract 8I187 (Prace Inst. obróbki skraw., no. 12, 1961, 3 - 18)

TEXT: Methods of producing pure dicyclohexylamine nitrite are discussed and its anti-corrosion properties are studied. It was established that the simplest practical application of dicyclohexylamine nitrite was for impregnating packing paper: 2 g of dicyclohexylamine nitrite per m^2 of paper give 200 days protection against corrosion. Dicyclohexylamine nitrite is also said to preserve the shine of polished components. [Abstracter's note: Complete translation.]

Card 1/1

KAPKO, Jerzy

Polycaproamide derivatives containing acid functional groups.
Przem chem 41 no.6:328-331 Je '62.

1. Zaklad Tworzyw Sztucznych, Politechnika, Krakow.

KAPKO, Jerzy

Soluble polycaproamide derivatives containing acidic functional groups. Polimery tworz wielk 8 no.3:102-103 Mr '63.

1. Zaklad Tworzyw Sztucznych, Politechnika, Krakow.

IWASIEWICZ, Andrzej; KAPKO, Jerzy; RUDOL, Franciszek

Studies on harness measuring of plastics by the Brinell method. Polimery tworz wielk 8 no.1:20-23 Ja '63.

1. Zaklad Tworzyw Sztucznych, Politechnika, Krakow.

KAPKO, J.

Properties of solutions of a new group of polyamide polyelectrolytes. Bul chim PAN 12 no.11:747-754 '64.

1. Institute of Plastics of Krakow Technical University. Submitted August 3, 1964.

KAPKO, Jozefa; TANIEWSKI, Michal

Studies on the stability of alkyd melamine resin binders.
Polimery tworz wielk 8 no.11:418-420 N '63.

1. Instytut Farb i Lakierow, Gliwice.

TANIEWSKI, Michal; KAPKO, Jozefa

Urea resins modified with polyadipate of trimethylolpropane.
Polimery tworz wielk 7 no.9:326-327 S '62.

1. Instytut Farb i Lakierow, Gliwice.

KAPKO, J.

Soluble polycaproamide derivatives with acidic functional groups. Bul chim PAN 12 no. 2: 99-102 '64

1. Plastics Department, Technical University, Krakow.
Presented by T. [redacted]anski.

KAPKO, Jerzy

New method of obtaining aluminum oxide for the production of sintered parts. Inst obrobki skraw prace no.16:55-59 '63.

KAPKO, L K

USSR / Farm Animals. Cattle. Q-2

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54769.

Author : ~~Kapko L. K.~~
Inst : Not given.
Title : The Fattening of Young Bulls on Corn Silage.

Orig Pub: Byull. nauchno-tekhn. inform. Krasnodarsk. n.-i. in-ta s. kh., 1957, vyp. 1, 46-47.

Abstract: One group of castrated young bulls aged one year were fed rations consisting of 2 kg. hay, 4 kg. straw, 1 kg. sunflower-seed oilcake and 13 kg. corn stalk silage; the second group was given 5 kg. corncob silage instead of 13 kg. corn stalk silage. The fattening lasted 96 days. The weight gain in the second group was 24.7% higher, and 17% less feed units were spent per 1 kg. of weight increase.

Card 1/1

KARYO, P. S.

1612. Vliyaniye Tipa Kormleniya I Massazha Vymeni Na Plemennyye Kachestva Svinomatok Krupnoy Beloy Porody. M., 1954. 16s 21sm. (Vesesoyuz. Nauch.-issled. In-T Zhivotnovodstva. OTD. Svinovodstva). 110 EKZ. Bespl.-(54-54221)

SO: Knizhnaya Letopis', Vol. 1, 1955

USSR/Farm Animals. The Swine Q-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50044

Author : Kenko P.S.
Inst : Krasnodar Scientific Research Institute of Farming
Title : Comparative Fattening of North-Caucasus and Large White Breed Swine.

Orig Pub : Byul. nauchn.-tekhn. inform. Krasnodarsk. n.-i. in-ta s. kh., 1957, vyp. 1, 50-51

Abstract : The average daily weight gains of young sows of the North-Caucasus breed amounted to 669.2 gr and were 11.4 percent higher than weight increases of young sows of the large white breed (588.0).

Card : 1/1

SOKOLOV, N.K.; KAPKO, P.S., kand.sel'skokhozyaystvennykh nauk; MALYUGINA, Ye.A., nauchnyy sotrudnik

Valuable mineral feed for swine. Svinovodstvo 13 no.11:26-28 N '59. (MIRA 13:2)

1. Glavnyy zootekhnik Krasnodarskogo plodoovoshchnogo sovkhoza No.2 (for Sokolov). 2. Krasnodarskiy nauchno-issledovatel'skiy institut sel'skogo khozyaystva.
(Swine--Feeding and feeds) (Minerals in food)
(Sugar industry--By-products)

KAPKO, Roman

The problem of durability of road wheels and crane rails. Problemy proj hut maszyn 10 no.8:247-252 Ag '62.

1. Biprostal, Krakow.

KAPKO, YA. T.

Stars,-Variable

Investigation of three variable stars of V 456 Ophiuchi. Uch. zap. L'vov. un. no. 4 (1949)

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified

1. KAPKO, YA. T.

2. USSR (600)

4. Ursa Major

7. Photovisual curve of the light of W. Ursae Majoris. Per.zvezdy 8 no. 3, 1951

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

KAPKO, Ya.T.

Observations of AP Herculis in 1951. Per.zvezdy 9 no.1:75-77 S'52. (MLRA 8:10)

1. L'vovskaya astronomicheskaya observatoriya
(Stars, Variable)

KAPKO, Ya.T., starshiy nauchnyy sotrudnik.

Photographic photometry of the sun's corona, 1952. Dop.ta pov.L'viv.un. no.4, pt.2:76 '53. (MLRA 9:11)

(Sun--Corona) (Photometry)

KAPKO, Ya.T.

AP Herculis. Astron.tsir. no.147:16 Mr '54. (MLRA 7:8)

1. L'vovskaya Astronomicheskaya observatoriya.
(Stars, Variable)

KAPKO, Ya.T. (Lvov)

Report of the Lvov Astronomical Observatory expedition for observing the total solar eclipse of June 30, 1954. Astron.tsir.no.151: 22-23 Jl '54. (MLRA 8:3)
(Eclipses, Solar--1954)

KAPKO, Ya. T.

Observations of minor planets at Lwov Observatory. Astron. tsirk. no.175:4-5 D '56. (MLRA 10:5)

1. L'vovskaya Astronomicheskaya observatoriya.
(Planets, Minor)

KAPKO, Ya.T.

Observations of the total lunar eclipse of May 13-14, 1957, at the Lwov Astronomical Observatory. Astron. tsir. no.181:14-16 Je '57. (MIRA 13:3)

1.L'vovskaya astronomicheskaya observatoriya.
(Eclipses, Lunar--1957)

SOV/35-59-8-6185

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, Nr 8, p 14

AUTHOR: Kapko, Ya.T.

TITLE: Observations of Minor Planets at the L'vov Astronomical Observatory

PERIODICAL: Astron. tsirkulyar, 1958, August 26, Nr 194, p 9

ABSTRACT: The results of the observations of minor planets (α , δ , O-C) carried out with a Zeiss triplet camera (D = 100 m, F = 50 cm) in 1957 are given. The plates were measured by Graff's measuring instrument. The positions of the planets were calculated by the Kayzer plane method with two reference stars. Planets 11, 17, 19, 20, 39, 48, 93, 113, 119, 123, 168, 200, 268, 287, 356, 362, 694 were observed.

N.B.P.

Card 1/1

KAPKO, Ya.T.

Observations of comets at the Lvov Astronomical Observatory.
TSir. Astron. obser. L'viv. un. 35/36:48-50 '60. (MIRA 14:4)
(Comets)

KAPKO, Ya.T.

V 336 Aquilae. TSir. Astron. obser. L'viv. un. no.39/40:44-46 '63.

V 342 Herculis. 47-53

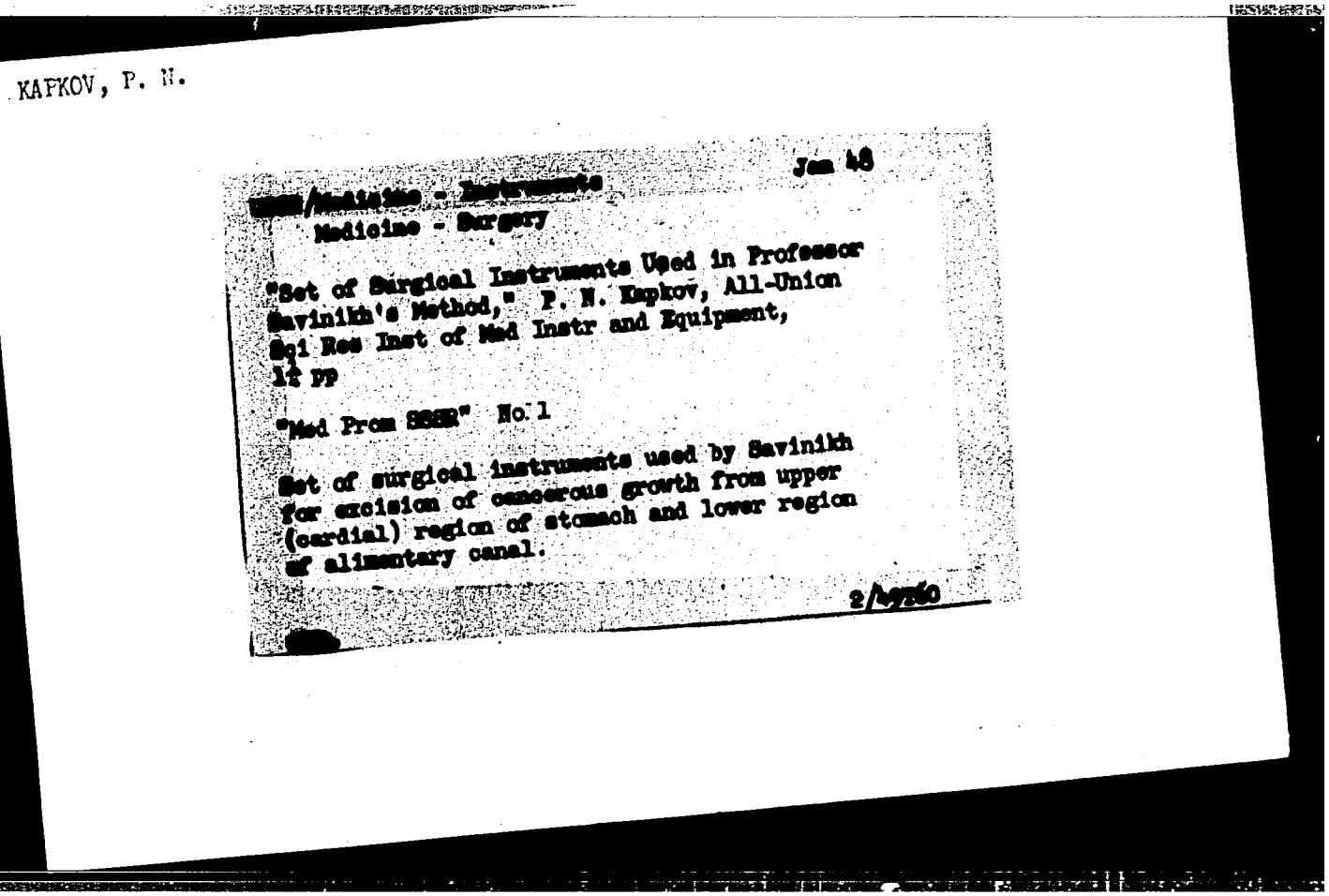
RE Monocerotis. 54-59 (MIRA 16:11)

KAPKO, Ya.T.

Observations of lunar occultations of stars in Lvov. Biul. Inst. teor. astron. 9 no.9:626-627 '64. (MIRA 17:12)

1. Astronomicheskaya observatoriya L'vovskogo gosudarstvennogo universiteta.

KAFKOV, P. N.



Jan 48

USSR/Medicine - Instruments
Medicine - Surgery

"Set of Surgical Instruments Used in Professor Savinikh's Method," P. N. Kapkov, All-Union Sci Res Inst of Med Instr and Equipment, 1½ pp

"Med Prom SSSR" No. 1

Set of surgical instruments used by Savinikh for excision of cancerous growth from upper (cardial) region of stomach and lower region of alimentary canal.

2/49260

Medical Instruments and Apparatus

Apparatus for underwater intestinal lavage (subaqual bath) designed at the All-Union Scientific Research Institute of Medical Instruments and Equipment. Med. prom. no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

KAPKOV, P.N.

Equipment and apparatus for group inhalation. Med. prom. 12 no.6:45-48 Je '58 (MIRA 11:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo instrumentariya i oborudovaniya.
(INHALATION THERAPY)
(MEDICAL INSTRUMENTS AND APPARATUS)

GAYEVOY, Ye.V., kand. sel'skokhoz. nauk; PANYUKIN, I.I., kand. tekhn. nauk; MASHKOV, A.N., kand. sel'skokhoz. nauk; DINARIYEVA, G.P., mladshiy nauchnyy sotrudnik; KAPKOV, R.K., inzh.

Development of the methodology for the processing of fur sheepskins preserved with formaldehyde hyposulfite compounds. Trudy VNIIMP no.15:56-66 '63. (MIRA 17:5)

KAPKOV, Yu.N.

Use of semiquantitative spectrum analysis for some geochemical deductions. Zap. LGI 39 no.2:119-123 '61. (MIRA 15:2)
(Geochemical prospecting) (Spectrum analysis)

ACC NR: AM6008492 Monograph UR/

Novikov, Grigoriy Fedorovich; Kapkov, YUriy Nikolayevich

Radioactive methods of prospecting (Radioaktivnyye metody razvedki) Leningrad, Izd-vo "Nedra", 65. 0758 p. illus., biblio. Textbook for students of higher educational institutions studying in the speciality of "Geophysical methods of prospecting deposits of minerals". 3,500 copies printed.

TOPIC TAGS: geologic survey, prospecting, radiometry, gamma radiation, irradiated gas

PURPOSE AND COVERAGE: This book presents the physical and geological bases of radioactive methods, working principles, a description of radiometric apparatus and methods of laboratory radiometric analysis of radioactive ore. It also gives methods of surveying and prospecting deposits of radioactive elements and other minerals paragentically combined with radioactive elements: aerial gamma surveying, gamma surveying by automobile, gamma surveying on foot, emission surveying, lithogeochemical surveying, methods of studying radioactivity of water, gamma core sampling from bore holes, and radiometric sampling of ore taken from beds. For each of the above methods views are shown of the fields of application, theoretical principles, methods of work, laboratory processing of materials and geological interpretation of the results. This book is recommended for geophysics students in mining and geological survey institutes and universities with courses on "Radioactive methods of survey" and "Radiometry". It can also be useful to geophysicists and geologists in their practical work.

Card 1/3 UDC: NONE

ACC NR: AM6008492

TABLE OF CONTENTS (abridged):

Card 2/3

ACC NR: AM6008492

luminescent analytical processes
Ch. 14. Litho- and biogeochemical methods--560
Ch. 15. Radiohydrogeological method--588
Sect. IV. Methods of sampling radioactive ores by radiation
Ch. 16. Gamma core sampling--614
Ch. 17. Radiometric sampling of radioactive ores in the original bed--677
Ch. 18. Combined use of radioactive methods for surveying and prospecting deposits of radioactive ore-723
Ch. 19. Use of radioactive methods for purposes of geological mapping, surveying and prospecting nonradioactive minerals--731
Bibliography--745

SUB CODE: 20, 08 SUBM DATE: 04Nov65/ ORIG REF: 230/ OTH REF: 059

Card 3/3

KAPKOV, Yu. N.

Methods of geochemical investigation. Zap. LGI 45 no. 2: 16-20 '63.

Easily soluble uranium in metamorphic rocks of the Sinian system. Ibid.:21-24 (MIRA 17:5)

NOVIKOV, Grigoriy Fedorovich; KAPKOV, Yuriy Nikolayevich;
IVANOV, N.A., retsenzent; SERDYUKOVA, A.S., retsenzent;
GORBUSHINA, L.V., retsenzent; ZIMIN, D.F., retsenzent;
TAFEYEV, G.P., nauchn. red.; TAYBASHEVA, A.N., ved. red.

[Radioactive methods of prospecting] Radioaktivnye metody razvedki. Leningrad, Nedra, 1965. 758 p. (MIRA 19:1)

GAPANOVICH, L.N., kand.tekhn.nauk; SAKHAROV, A.P., kand.tekhn.nauk;
KAPKOV, Yu.V.

Using the optical method to study the streee state of interchamber pillars of coal in the chamber-and-pillar system. Nauch. soob. IGD 17:79-86 '62. (MIRA 16:7)
(Coal mines and mining) (Strains and stresses)

LOPATIN, G.Ye.; KAPKOV, Yu.V.

Investigating stress distribution around an untimbered working.
Trudy IGD (Sverd.) no.8:55-60 '64.

(MIRA 17:10)

KAPKOVA, A.G.

USSR / Microbiology / Microbes Pathogenic to Humans and Animals. F-3

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 5236

Author : Minkevich, I.E., Bragina, A.N., Kapkova, A.G.

Inst : Not given

Title : Endotoxins of Coliform Bacteria

Orig Pub : V sb.: Uslovno-patogen. mikroby i ikh rol' v zabolevaniyakh alimentarn. proiskhozhdeniya. L., Medgiz, 1955, 5-9

Abstract : A study was conducted on 300 cultures of coliform bacteria isolated from adults, children, and calves, from healthy as well as from suffering from alimentary canal diseases. All the strains were related in their cultural, biochemical and morphological properties to typical B. coli. In 91 cultures, endotoxin (E) was found by a me-

Card : 1/4

[redacted] was similar to the changes observed in infection by live bacteria. In intradermal introduction into guinea pigs of 0.2 ml of liquid E (Gross test), hyperemia, infiltration and necrosis were observed. The tests of E activity on guinea pigs

Card : 2/4

USSR / Microbiology. Microbes Pathogenic to Humans and Animals. F-3

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 5236

tisera with an agglutinizing titer of 1:15,000 and 1:3,200, homologous cultures were obtained. A cross-agglutination with anti-endotoxic sera and heterologous E was rarely observed. A 5-fold immunization of mice by E made them resistant to 3 DLm of homologous E. In heating an anti-endotoxic serum mixed with homologous serum for a period of two hours at 48°, sizeable flakes were formed. An introduction of this mixture into mice did not cause their death. In heating of the antiserum with heterologous E at 48°, no flakes precipitated, and mice given this mixture died.

Card : 4/4

USSR/Microbiology - Sanitation Microbiology F-4

Abs Jour : Ref Zhur - Biol., No 3, 1958, 9872

Author : Ignatovich, Z.A., Kapkova, A.G.
Inst : -
Title : Use of Rosolic Agar (According to Kichenko) for Bacteriological Examination of Food Products.

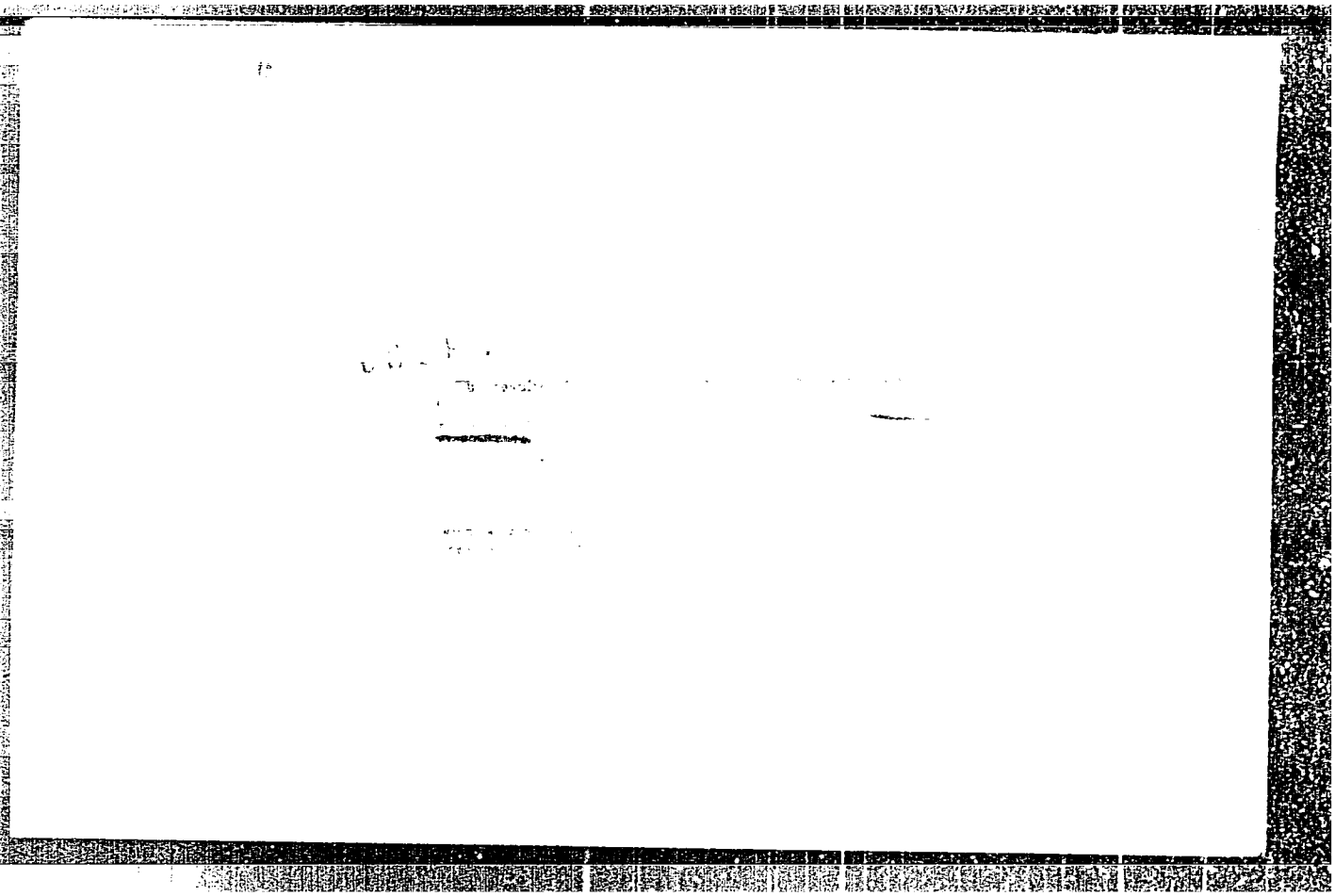
Orig Pub : Labor. delo, 1957, 3, No 2, 46-47

Abstract : Sensitivity of rosolic agar suggested by Kichenko was checked by parallel inoculation on Endo medium. 475 tests were conducted, of which 141 were analyses of washings and 334 analyses of food products, chiefly milk and milk products. Analyses of washings yielded 92.5% concordance on both media, analyses of food products -- 85.9%. Of 58 analyses, where results differed, in 48 cases preference was accorded to Endo medium, in 9 cases better results were obtained on rosolic agar. In testing 10 samples of highly seeded corned beef on Endo medium, intestinal bacilli

Card 1/2

Sanitary-Bacteriol. Lab. Leningrad Sci Res Sanitary Hyg. Inst.

Card 2/2



ZHUKOVA, K.P.; KAPKOVA, Ye.A.; KASIKHIN, A.N.; KOZLOVA, V.I.; MILOVIDOVA, N.D., red.; STREL'TSOVA, N.P., red.

[Corn pests and diseases] Vrediteli i bolezni kukuruzy. 2. izd. Moskva, Sel'khozizdat, 1963. 34 p. (MIRA 17:4)

KAPKOVA, Ye.A.; TSVETAYEVA, I.A.

Heptachlor in corn protection. Zashch.rast.ot vred.i bol.4 no.4: 37 Jl-Ag '59. (MIRA 16:5)

(Corn (Maize)— Diseases and pests) (Heptachlor)

5.5120
5.5140

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SOV/81-59-7-23002

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 7, p 131 (USSR)

AUTHORS: Ryazanov, I.P., Kapkova, Ye.I.

TITLE: Microscopic Reactions of Anions With Complex Cobalt Ammoniates

PERIODICAL: Sb. nauchn. tr. Magnitogorskiy gorno-metallurg. in-t, 1958, Nr 16, pp 161 - 168

ABSTRACT: The following complex cobalt ammoniates: $[Co(NH_3)_6]Cl_3$ (I), $[Co(NH_3)_5Cl]Cl_2$ (II), $[Co(NH_3)_5H_2O]Cl_3$ (III), $[Co(NH_3)_6](NO_3)_3$ (IV), $[Co(NH_3)_5NO_3](NO_3)_2$ (V), $[Co(NH_3)_5H_2O](NO_3)_3$ (VI) and $[Co(NH_3)_4CO_3]_2SO_4$ (VII) were studied as reagents for the detection of anions. One drop of the solution to be analyzed was mixed on the object glass with 1 drop of I, II, III, IV, V, VI or VII solution and the precipitate formed was inspected under the microscope. It was established that I produces sensitive microscopic reactions with IO_4^-, $Fe(CN)_6^{3-}$, $Fe(CN)_6^{4-}$, $PtCl_6^{2-}$, ReO_4^- and CrO_4^{2-} (the detected minimum is 0.5 - 7γ). II, III, IV, V, VI and VII show somewhat less sensitive reactions with the same anions. II and III are suitable for the detection of IO_4^- in the

Card 1/2

Microscopic Reactions of Anions With Complex Cobalt Ammoniates

presence of ReO_4^- and ClO_4^-, since the latter do not form precipitates with II and III. I is suitable for the detection of $S_2O_3^{2-}$ in the presence of SO_4^{2-}; $PtCl_6^{2-}$ and $AuCl_4^-$ can also be detected by means of I in the case of their combined presence (the crystalline precipitates formed have different shapes). $PtCl_6^-$ is also well detected in the presence of $AlCl_4^-$ by means of II, IV, V and VI.

4

A. Nemodruk

Card 2/2

TANOVSKIY, P.I., insh.; ALEKSEYEV, M.M., dotsent, kand. geologo-min.nauk; KAFKOVA, Ye.I., dotsent, kand. khim nauk

Effect of ultraviolet and X rays on the floatability of coal sludge. Nauch. dokl. vys. shkoly; gor. delo no.1:227-232 '59. (MIRA 12:5)

1. Predstavlena kafedroy geologii Khar'kovskogo gornogo instituta.
(Coal preparation) (Ultraviolet rays) (X rays)

KAPKOVA, Ye.I.; RYABOSHTAN, D.I.

Effect of various media and temperatures on the properties of cold-hardened epoxy compounds. Plast. massy no.11:61-63 '63. (MIRA 16:12)

KAPKOVA, Ye.I.; TERLETSKAYA, L.S.; RYABOSHTAN, D.I.

Effect of heat treatment on the properties and structure of articles made from kapron residues. Plast. massy no.6:62-65 '63. (MIRA 16:10)

KAPKOVA, Ye.I. [Kapkova, IE.I.], kand. tekhn. nauk; BASTEYEVA, N.D. [Basteyeva, N.D. [Basteieva, N.D.]; RYABOSHTAN, D.I.

Effect of temperature on the properties and structure of polyamides. Khim. prom.[Ukr.] no.1:11-14 Ja-Mr '65. (MIRA 18:4)

KAPKOVA, Z. I.

"Data on the Functional Condition of the Liver During Scarlet Fever in Children." Cand Med Sci, Khar'kov Medical Inst, Khar'kov, 1955. (KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

KAPKOVA, Z.I.

Urine color sedimentation reaction in gastrointestinal diseases in children. Vop.okh.mat.i det. 4 no.6:86-87 N-D '59. (MIRA 13:4)

1. Iz Khar'kovskogo meditsinskogo instituta.
(URINE--ANALYSIS AND PATHOLOGY)
(DIGESTIVE ORGANS--DISEASES)

KAPKOVA, Z.I., dotsent

Diagnostic significance of the intracutaneous test with TSuverkalov allergen in dysentery in children. Vop. okh. mat. i det. 7 no.3: 21-25 Mr '62. (MIRA 15:5)

1. Iz kafedry detskikh infektsionnykh bolezney (zav. - dotsent A.D. Pevzner) Khar'kovskogo meditsinskogo instituta (dir. - dotsent B.A. Zadorozhnyy), na baze 21-y detskoy infektsionnoy bol'nitsy (glavnyy vrach I.M.Chervontsev).
(DYSENTERY) (ALLERGY)

KAPKOVA, Z.I., dotsent; MARGULIS, B.A.

Clinical course of food poisoning caused by Salmonella typhimurium in children. Vop.okh.mat.i det. 8 no.3:46-49 Mr '63. (MIRA 16:5)

1. Iz kafedry detskikh infektsionnykh bolezney (zav. - dotsent A.D. Pevzner) Khar'kovskogo meditsinskogo instituta i 21-y Detskoy infektsionnoy bol'nitsy (glavnyy vrach N.N. Yezhik).

(FOOD POISONING) (SALMONELLA INFECTIONS)

KAPKOVA, Z.I., dotsent

Some indices of the reactivity of the body in scarlet fever in children. Ped., akush. i gin. 25 no.2:8-12 '63. (MIRA 16:9)

1. Kafedra dityachikh infektsiynikh khvorob (zav. - dotsent A.D. Pevzner) Kharkivs'kogo medichnogo institutu (rektor-dotsent B.A.Zadoroshnyy [Zadoroshnyi, B.A.]) na bazi 8-i dityachoi infektsiynoi likarni (golovniy likar Ye.V. Chebotar'ova [Chebotar'ova, IE.V.])
(SCARLET FEVER)

26.2120
24.4200 1103, 1327, 1538

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P/032/61/008/002/001/002
D217/D306

AUTHORS: Kapkowski, Jacek, and Łukasiewicz, Stanisław

TITLE: The influence of temperature on the uniform strength of rotating discs

PERIODICAL: Archiwum budowy maszyn. v. 8, no.2, 1961, 201-222

TEXT: This work gives a method for finding the shape of uniform strength rotating discs subjected to a radial temperature gradient. Variations of material properties with temperature are expressed approximately by means of exponential functions. Variations of temperature along the radius

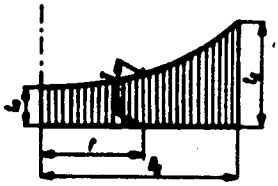

Fig. 1

Card 1/17

The influence of...

are assumed parabolic and expressed by

$$T = t_0 + t_1 \varrho^2 \quad \text{where} \qquad (1)$$

$t_1 = t_2 - t_0$ and $\varrho = \frac{r}{R_2}$ Properties of the material (modulus E and limit of plasticity σ_{p1}) will change with temperature. Therefore, the permissible stress, σ_{dop} is related to radius.

$$\sigma_{dop} = \sigma_{p1}(\varrho). \qquad (2)$$

Both E and σ_{p1} vary with temperature in such a way that they can be expressed with good accuracy by exponential functions. Thus

$$\sigma_{dop} = \sigma_0 e^{-\alpha \varrho}, \quad \text{and} \qquad (2A)$$

$$\sigma_{p1}(\varrho) = \sigma_{p1_0} e^{-\alpha \varrho}, \qquad (3A)$$

where

$$\frac{\sigma_{dop}}{E} = \frac{\sigma_0}{E_0} e^{-\alpha \varrho},$$

Card 2/17

The influence of...

$$\varphi(\varrho) = e^{-\varkappa_1 \varrho}. \qquad (3B)$$

E_o and σ_o - modulus and allowable stress at the center of the disc; $\varkappa_1$ and $\varkappa_2$ - constant exponents for the given material. The variation of the coefficient of thermal expansion is

$$\alpha = \alpha_o f(\varrho), \qquad (4)$$

where α_o is the value at the center of the disc. The required thickness of the disc is assumed to be $h = h_o e^{\lambda}$ where $\lambda = \lambda(\varrho)$. Therefore the familiar equation of equilibrium assumes the form

$$\frac{d\sigma_r}{dr} + \sigma_r \frac{d\lambda}{dr} + \frac{\sigma_r - \sigma_t}{r} + Q = 0 \qquad (7)$$

The condition of continuity of strains for the axisymmetric system

Card 3/17

The influence of...

is

$$\frac{de_1}{dr} = \frac{e_r - e_1}{r}. \qquad (8)$$

$$e_1 = \frac{1}{E}(\sigma_1 - \nu\sigma_r) + \alpha T, \qquad (9)$$

where

$$e_r = \frac{1}{E}(\sigma_r - \nu\sigma_1) + \alpha T.$$

As regards the condition of uniform strength, by the theorem of failure based on distortion energy (M.T. Huber) for the two dimensional stress system, there results

$$\sigma_r^2 - \sigma_r\sigma_1 + \sigma_1^2 = \sigma_{con}^2, \qquad (10)$$

Card 4/17

The influence of...

Alternatively, by the theorem of maximum shear stress, the stressed state is given by the polygon of Tresci (Fig. 3).

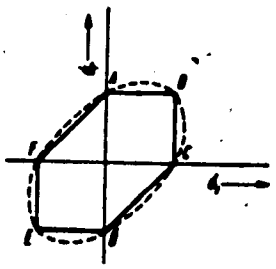

Fig. 3

The known solution of uniform strength discs stipulated $\sigma_r=\sigma_t=\sigma_{dop}$ which corresponds to point B. For the other sides of the polygon the conditions are:

$$\begin{aligned} &\sigma_{dop}=\sigma_r, && gdy && \sigma_r>\sigma_t,\\ &\sigma_{dop}=\sigma_t, && gdy && \sigma_t>\sigma_r,\\ &\sigma_{dop}=\sigma_r-\sigma_t, && gdy && \sigma_r\sigma_t\leqslant 0. \end{aligned} \qquad (11)$$

Card 5/17

The influence of...

To determine thickness h it is necessary to solve three equations, namely (7) (8) and (10) or (11). The condition of uniform strength is first satisfied in the identity form by substitutions used in the theory of plasticity. Then stress distribution is found using condition (8) (which does not depend on h). Finally the thickness function h is found by the equation of equilibrium. Boundary conditions: For a disc without a hole in the center there is $\sigma_r = \sigma_t = \sigma_{dop}$ at r = 0

$$\sigma_r = \sigma_t = \sigma_{dop} \quad \text{dla} \quad r = 0. \tag{12}$$

For a disc with a bore: $\sigma_r = 0$ at $r = R_o$ Rim loading from turbine blades is

$$n_r = \frac{Q}{g}\frac{i\Omega^2 r_c}{2\pi R_o},$$

where

Q - weight of one blade; i - number of blades; r_c - radius to blade center of gravity. Then thickness at $\rho = 1$ is

$$h_o = \frac{n_r}{\sigma_{dop}(\rho=1)} = \frac{Qi\Omega^2 r_c}{2\pi R_o \sigma_{dop} \psi(\rho)}. \tag{13}$$

Card 6/17

The influence of...

If the blades are set in a wider shroud (Fig. 4) then

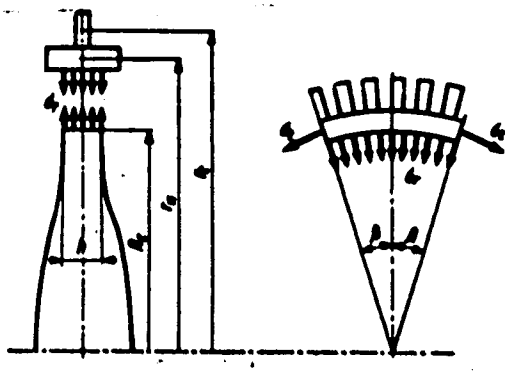

Fig. 4

$$h_0 = \frac{\Omega^2 F}{\sigma_r R_s g}\left(r_w^2\gamma + \frac{Q\gamma_s j}{2\pi F}\right) - \gamma\frac{F}{R_s} - \frac{a_1}{\sigma_r}\frac{EF}{r_w} + \frac{\alpha T E_1 F}{\sigma_r R_s}. \qquad (17)$$

Card 7/17

where F - shroud cross - sectional area. The authors then examine the solution based on Huber-Mises (Distortion Energy). To satisfy Eq. 10 in an identity form stresses are expressed in terms of one function $\omega = \omega(\varrho)$:

$$\sigma_r = 2k\cos\left(\omega + \frac{\pi}{6}\right)\psi(\varrho),$$

$$\sigma_t = 2k\cos\left(\omega - \frac{\pi}{6}\right)\psi(\varrho) \qquad (18)$$

where $k = \sigma_0/\sqrt{3}$
By continuity of strains there then results

$$\frac{d\omega}{dr} = -\frac{\frac{1}{\varphi(\varrho)}\left[\varphi'(\varrho)\sin(\omega+\mu) + \frac{\alpha T' E_0}{2k\sqrt{1-\nu+\nu^2}}\right] + \frac{1+\nu}{\sqrt{1-\nu+\nu^2}}\frac{\sin\omega}{r}}{\cos(\omega+\mu)} \qquad (20)$$

Card 8/17

The influence of...

in which

$$\sin\mu = \frac{(1-\nu)\sqrt{3}}{2\sqrt{1-\nu+\nu^2}}, \qquad \cos\mu = \frac{1+\nu}{2\sqrt{1-\nu+\nu^2}}, \tag{21}$$

To eliminate the temperature variable, ϱ is replaced by R, so that

$$R = \beta\varrho = \sqrt{\frac{\alpha T' E_0}{2k\sqrt{1-\nu+\nu^2}}}\,\varrho \tag{22}$$

where $T' = dT/dr$.
Also if $\nu = \frac{\lambda_1}{p} = 0$,

$$\frac{d\omega}{dr} = -\frac{R + \frac{1+\nu}{\sqrt{1-\nu+\nu^2}}\frac{\sin\omega}{R}}{\cos(\omega+\mu)}. \tag{24}$$

Card 9/17

The influence of...

By equations (18) and (20) the final solution of (7) is

$$\frac{d\lambda}{d\varrho} = \frac{-\frac{\gamma\Omega^2 R_z^2}{2kg}\cdot\frac{\varrho}{\psi(\varrho)}+\frac{\sin\omega}{\varrho}}{\cos\left(\omega+\frac{\pi}{6}\right)} + \operatorname{tg}\left(\omega+\frac{\pi}{6}\right)\frac{d\omega}{d\varrho} - \frac{\psi'(\varrho)}{\psi(\varrho)} \qquad (25)$$

which can be integrated.
The constant of integration C is obtained from $h = h_o e^{\lambda}$ by the boundary condition: $h = h_o$ and $\lambda = o$. On substitution of (18) formula (17) for h_o becomes

$$h_o = \frac{E_o F}{2kR_z\cos\left(\omega_z+\frac{\pi}{6}\right)}\left[\frac{\Omega^2}{gE_i}\left(r_{\omega}^2\gamma+\frac{Qr_{\omega}i}{2\pi F}\right)+\right. \qquad (27)$$

$$\left.-\frac{2k}{E_o}R_z\sqrt{1-\nu+\nu^2}\sin(\omega_z+\mu)-\alpha T(R_z-r_{\omega})\right]-\nu\frac{F}{R_z},$$

Card 10/17

The influence of...

where ω_2 is the value of ω at $\varrho = 1$. calculated from Eq.(20). The authors also examine the solution based on the theorem of maximum shearing stress. In this case solutions for the discs with and without a central hole are different. Disc without a hole: assuming that $\sigma_r > \sigma_t$ for the whole disc, the following substitution can be made:

$$\sigma_r = \sigma_{max}, \qquad \sigma_t = (1 - 2x)\sigma_{max}, \tag{28}$$

where x - unknown function of ϱ. Neglecting the variation of expansion coefficient α, the final equation for the conditions of uniform strength and strain continuity is

$$\frac{dx}{dR} + x\left(\nu\nu + \frac{1+\nu}{R}\right) + x\frac{1-\nu}{2} - Re^{\nu R} = 0. \tag{32}$$

where $\beta = E_0 t_1 \alpha_0 / \sigma_0$. $\gamma_1 / \sqrt{\beta} = \mathcal{H}$

Card 11/17

The influence of...

and

$$\varrho = R/\sqrt{\beta},$$

(30)

The solution of equation (32) is anticipated in the form of a series with $\varkappa$ as a small parameter,

$$x = x_0 + \varkappa x_1 + \varkappa^2 x_2 + \ldots.$$

The exponential function in (32) is also expanded and only three first terms are taken from each series. Finally, using equilibrium equation (7) the authors obtain: (Eq. 35)
Neglecting the change of material properties but taking into account thermal stresses, a strict solution is obtained in the form

$$\lambda = \lambda_0 + \left(\frac{\beta}{3+\nu} + \frac{\gamma\Omega^2 R_*^2}{2\sigma_{0\beta}}\right)(1-\varrho^2). \qquad (36)$$

Card 12/17

The influence of...

$$\lambda = \lambda_0 + A(\varrho - 1) + B(\varrho^2 - 1) + C(\varrho^3 - 1) + D(\varrho^4 - 1),$$

$$A = \varkappa_2 + \frac{\varkappa_1(1-\nu)}{2+\nu}, \qquad (35)$$

$$B = -\frac{\beta}{3+\nu} + \frac{\varkappa_1^2(1-\nu)}{2(2+\nu)(3+\nu)} - \frac{\gamma\Omega^2 R_1^2}{2\sigma_{0g}},$$

$$C = -\frac{2\beta\varkappa_1}{3(3+\nu)} - \frac{\gamma\Omega^2 R_1^2}{3\sigma_{0g}}\varkappa_2,$$

$$D = -\frac{\varkappa_1^2\beta}{4(3+\nu)} - \frac{\gamma\Omega^2 R_1^2}{8\sigma_{0g}}\varkappa_2^2.$$

This solution is valid for: $0<x<1/2$. Finally, after examining the case of a disc with a bore, the authors illustrate the method by calculating disc profiles with the following data:

Card 13/17

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AUTHOR: Kapkowski, Jacek, (Warsaw)

TITLE: Introducing a concentrated force into a panel, the condition of uniform strength being observed

PERIODICAL: Archiwum budowy maszyn, v. 7, no. 1, 1960, 87 - 97

TEXT: The author determines analytically the shape of the panel of uniform strength under the action of a concentrated force acting on its edge. A large panel is assumed and, therefore, the uniplanar state of stresses is considered. The condition of equilibrium of normal and tangential forces is considered for the element of the panel (Fig. 2) introducing the condition of the indivisibility of deformations in the equation of strains. The final equation is obtained in polar coordinates, in which the two unknowns are the stress function and the panel thickness. These two unknowns are then related by the conditions of uniform strength assuming the shear energy criterian. The system of 2 non-linear equations is thus obtained for which the general solution is not known. For the

Card 1/6

Introducing a concentrated force ...

case of an undirectional stress distribution the solution is given for an infinite half-disc under the action of a force applied uniformly across its thickness and perpendicular to its edge (Fig. 3). The expression for the stress function is given in the form of

$$\varphi = -\frac{P}{\pi} r\vartheta \sin \vartheta, \qquad (10)$$

(r, ϑ - polar coordinates), and the thickness is found to vary according to the law

$$\delta = \frac{1}{C} \frac{2P}{\pi r} \cos \vartheta. \qquad (14)$$

The shape of this disc is also shown. The application of the stress function Eq. (10) for a wedge with the concentrated force applied at its apex is considered by superimposing two uniplanar stress distributions for the vertical and horizontal components of the applied force. (Fig. 6) and (Fig. 7). The final stress function is obtained in the form

$$\varphi_1 + \varphi_2 = \frac{Pr\vartheta}{2} \left(\frac{-\cos\varepsilon \sin\vartheta}{\alpha_0 + \frac{1}{2}\sin 2\alpha_0} + \frac{\sin\varepsilon \cos\vartheta}{\alpha_0 - \frac{1}{2}\sin 2\alpha_0} \right) \qquad (20)$$

Card 2/6

Introducing a concentrated force ...

For the uniform strength condition the thickness is found to vary according to

$$\delta = \frac{1}{C}\frac{P}{r}\left(\frac{\cos\varepsilon\cos\vartheta}{\alpha_0 + \frac{1}{2}\sin 2\alpha_0} + \frac{\sin\varepsilon\sin\vartheta}{\alpha_0 - \frac{1}{2}\sin 2\alpha_0}\right) \qquad (21)$$

In all the cases considered the expressions for the thickness variation do not apply in the immediate vicinity of the point of the application of forces. A numerical example is worked out for the wedge of $2\alpha_0 = 60^0$ under the action of a force. P = 1000 Kg applied at its apex at an angle $\varepsilon = -5^0$, and the results are represented graphically. There are 9 figures and 3 Soviet-bloc references.

SUBMITTED: September, 1959

Card 3/6